1	that, Mr. Page.	
2	Q Dr. Olsen, let me hand you what is marked as	
3	Exhibit 3 to your deposition. Can you identify	
4	Exhibit 3 for the Record? It's a collection of lab	
5	reports, but could you provide a general	01:31PM
6	description, please?	
7	A They're lab reports from a laboratory called	
8	Environmental Microbiology Laboratory, Incorporated,	
9	typically referred to as EML, and EML is doing	
10	bacterial analysis of samples collected from the	01:32PM
11	watershed.	
12	Q EML is the principal lab that CDM used for its	
13	bacterial work on surface water samples; is that	
14	right?	
15	A That's correct.	01:32PM
16	Q Okay. To the extent there is bacterial data	
17	that's used in your analysis, does it generally come	
18	from EML?	
19	A Yes.	
20	Q Okay. Could you turn I need some help in	01:32PM
21	interpreting some of these things. Could you turn	
22	to the page that at the bottom is number ending in	
23	3, 0003, and at the top you see your name. You're	
24	listed as the client; correct?	
25	A Yes, uh-huh.	01:33PM

1	Q	Okay. Just to the right of that, there is a	
2	series	s of dates. Do you see those?	
3	A	Yes.	
4	Q	And on this particular one, for example, it	
5	says d	late of sampling 4-20-2006; do you see that?	01:33PM
6	A	I have the three on mine. So you're not	
7	lookin	ng at the last three; you're looking at the	
8	second	to the last three?	
9	Q	No.	
10	A	There's lot of threes here. You want 33?	01:33PM
11	Q	Yes, sir. I'm sorry, I didn't realize there	
12	was tw	oo sets of three. Thank you.	
13	A	I was at the second set. Okay.	
14	Q	Just so we're clear, let's identify this page.	
15	At the	e bottom it's Bates number Olsen 0000773.0003;	01:33PM
16	correc	et?	
17	A	That's correct. I'm on the right page now.	
18	Q	Thank you. The date of sampling on this	
19	partic	cular report is listed as 4-2 0-2006; do you	
20	see th	nat?	01:33PM
21	A	Yes.	
22	Q	What does that reflect; what does that mean,	
23	date c	of sampling?	
24	A	Well, these were data collected by USGS, and	
25	typica	ally we don't do their analysis. They do a	01:34PM

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1	cooperative program with the State, but their labs	
2	were not set up to do the breadth of analysis of all	
3	the different types of bacteria that we wanted, so	
4	we had a cooperative agreement with them, and they	
5	would send splits of their samples to a laboratory.	01:34PM
6	So they sampled it on 4-20-2006.	
7	Q And when you say sampled, Dr. Olsen, you mean	
8	that's the data which this particular water sample	
9	was collected from river or whatever it was	
10	collected from; right?	01:34PM
11	A Yeah, and if you go over to the chain of	
12	custody, you can see that Monica Allen did that	
13	sampling for the USGS on 4-20-06 and, you know, she	
14	actually has the time there of at 12 I can't read	
15	her writing for sure. Looks like 1230 and it was	01:35PM
16	shipped at 1600 that day.	
17	Q Okay.	
18	A But the sampling was done on 4-20, and that's	
19	what that reflects.	
20	Q Thank you. Dr. Olsen, the next heading are	01:35PM
21	labeled as date of receipt and it shows the	
22	following date, 4-21-2006; do you see that?	
23	A Yes.	
24	Q And that was the date this sample was received	
25	by whom?	01:35PM

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1	A	More than that.	
	Q	Oh, it was 12:30 in the day, not 12:30 at	
2			
3	night?	•	
4	A	Yeah.	
5	Q	So it would have been a span of 21 hours?	01:36PM
6	A	Yeah, about 21 hours.	
7	Q	Okay. Thank you. Now, the next date is the	
8	date d	of the report. What does that mean?	
9	A	That's the date they generated this report, so	
10	that s	should reflect the same. That's when they	01:37PM
11	wrote	this up.	
12	Q	Okay.	
13	A	This report that we see in front of us.	
14	Q	Now, if you'll turn back a page in the stack	
15	to 000	02, do you see that?	01:37PM
16	A	Yes, uh-huh.	
17	Q	Some of these reports only have date of	
18	sampli	ing, date of receipt and date of report, no	
19	date d	of prep or date of analysis; do you see that	
20	diffe	rence?	01:37PM
21	А	Yes.	
22	Q	Why is it different?	
23	А	I don't know for sure why they forgot to add	
24	that i	in some of these.	
25	Q	Can you tell at what time the sample that's	01:37PM

1	shown at 7-73.002 was collected?	
2	A Well, this is all the same sample. This is	
3	just one sample we have here. It's just one sample,	
4	Chewy. So it was all done at the same time, just	
5	one shipment, one, you know, one, you know all of	01:38PM
6	the different bacteria, seven different bacteria but	
7	it was just one sample that was shipped. It was	
8	sampled the same time, received at the same time,	
9	and I don't know, you know, if they had different	
10	prep times for the Campybacter (sic) versus the	01:38PM
11	others ones or not. It's not reflected on here.	
12	Q Dr. Olsen, did CDM follow any particular hold	
13	time procedure which precluded the use of bacteria	
14	enumeration analysis conducted more than so many	
15	days or so many hours after a sample was collected	01:39PM
16	in the field?	
17	A No.	
18	Q Why not?	
19	A We actually looked at that, and there's	
20	variable recommendations in the literature, and	01:39PM
21	there's variable results depending on, you know, how	
22	long it is, depending on what program you are	
23	sampling under. So some of those are much longer	
24	than 24 hours, and that shows that there isn't any	
25	effect of bacterial data. Ultimately, you know, I	01:39PM

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1	left	it to Dr. Harwood to evaluate, you know, the	
2		ty of this particular set of data, the EML	
	data.	e, or early parerearar pee or adea, ene had	
3	data.		
4	Q	Okay. Can you refer me to any literature that	
5	you'r	e recalling that would specify up to a	01:39PM
6	24 - ho	ur did you say 24-hour hold time for	
7	bacte	ria?	
8	А	I think there's a lot of literature that	
9	speci	fy more than a 24-hour hold time. I can get	
10	you a	ll that. There's some up to 96 hours that show	01:40PM
11	there	's no difference, and because of all that	
12	liter	ature, we did not qualify any of the data.	
13	Q	Okay. None of the bacteria data was qualified	
14	or re	jected based on hold times; correct?	
15	А	None of EML data as far as I know.	01:40PM
16	Q	Okay. You agree that the analysis that is	
17	occur	ring at EML with respect to the these	
18	bacte	ria samples is enumeration; do you understand	
19	that	term?	
20	А	Yes, I think I do.	01:40PM
21	Q	Or counting	
22	А	Yes.	
23	Q	bacteria?	
24	А	Yes.	
25	Q	Okay, and you agree with me that the hold	01:40PM

1	times	from collection until analysis on the bacteria	
		hat was analyzed by EML exceeds eight hours?	
2	uata t		
3	A	What were the two dates?	
4	Q	Well, no two particular dates. Are you	
5	aware		01:41PM
6	А	Well, you have to look at the when it was	
7	receiv	ed and, you know, when it was prepped versus	
8	analys	is time.	
9	Q	Let me ask this.	
10	А	Because they start that's when the analysis	01:41PM
11	really	starts. You know, they get it right in the	
12	incuba	tor and that's when that's the critical	
13	time.		
14	Q	All of the bacteria samples were collected in	
15	northe	ast Oklahoma or northwest Arkansas; right?	01:41PM
16	А	Yes.	
17	Q	And the actual lab that analyzed these is	
18	locate	d in where?	
19	А	California.	
20	Q	Okay. So I assume, unless CDM had its own	01:41PM
21	plane	and flew back and forth, that you Fed Ex'd	
22	these	samples; is that right?	
23	А	Yes. In this case USGS Fed Ex'd them, the	
24	sample	we're looking at.	
25	Q	Are you aware of any instance in which a lab	01:41PM

1	$\overline{}$	1
ㅗ	J	ㅗ

1	would have received a sample within eight hours of
2	it being collected?
3	A Given the Fed Ex schedule, it was typically
4	over eight hours.
5	Q Okay. You said that you had looked at some 01:42PM
6	literature around hold times for bacteria. Did you
7	ever consult any EPA publications or guidelines to
8	see what they recommended?
9	A Yeah, and that's what I was referring to, the
10	literature. Again, that's in my opinion. Once I 01:42PM
11	looked at it and the actual scientific evaluations
12	behind it, that, you know, there was variable hold
13	times, and there was in my opinion variable
14	recommendation times by different agencies.
15	Q Well, you agree that EPA is a credible agency 01:42PM
16	in the areas of environmental sampling and analysis;
17	right?
18	A Yes.
19	Q Okay. In fact, you've done considerable work
20	for EPA, have you not? 01:42PM
21	A Yes.
22	Q You believe their standards are in keeping
23	with the rigors of the scientific methods?
24	A Yes.
25	Q Let me refer you to what I've marked as 01:42PM

```
Exhibit 4 to your deposition. Can you read the
 1
      title of Exhibit 4 first?
 2
            Improved Enumeration Methods For the
 3
 4
      Recreational Water Quality Indicators, Enterococci
      and -- I can't even pronounce these -- E. coli.
                                                                   01:43PM
 5
           And you do agree, do you not, Dr. Olsen, that
 6
      some of the types of bacteria that were enumerated
 7
      in these samples by EML were Enterococci and E.
 8
      coli?
 9
                                                                    01:43PM
10
            That's correct.
             Can you turn to Page 3 in this EPA publication
11
      under sample collection, preservation and storage;
12
13
      do you see that section?
            Yes.
      A
14
        And could you read for the Record the third 01:44PM
15
      sentence in that paragraph?
16
            Samples should not be held longer than six
17
      hours prior to analysis. An analysis should be
18
      completed within eight hours after collection of
19
      samples.
                                                                    01:44PM
20
            Did you meet EPA's recommendations as stated
21
      in this exhibit on Page 3 with respect to any of the
22
      bacteria analysis completed for this case?
23
            Not the EML samples.
24
            Well, were there another set of samples not
                                                                  01:44PM
25
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